

## Original Research Article

## Prevalence of maxillofacial pain with cardiac origin in patients referring to Emam Ali Hospital, Kermanshah city, Iran

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**Abstract:** The pain of cardiac origin can irradiate to a lot of sites in the body that maxillofacial is a rare site. This study evaluated the prevalence of maxillofacial pain with cardiac origin in patients referring to University Hospital, Kermanshah, Iran. In autumn 2012, twenty hundred and fifteen patients with ischemic heart disease and angina pectoris referred to University Hospital, Kermanshah, Iran. Age, sex and pain site were checked in all patients. The mean age of men and women were 60.7 and 63.9 years, respectively, that 192 patients had ischemic heart disease and 23 patients had angina pectoris. One patient had maxillofacial and chest pains that this patient was 67-year woman and had bilateral pain. This study showed that the low percentage of cardiac patients have maxillofacial pain, but because the probability of death and lack of opportunity for treatment of the patient, dentists should pay attention to this problem in the referred patients to the Clinic for cardiological evaluation.

**Keywords:** Pain, Maxillofacial, Cardiac disease, Bilateral.

### INTRODUCTION

Ischemic heart disease is one of the major causes of death in adults [1]. The pain of cardiac origin that starts in the orofacial region can irradiate to the throat, neck, temporal region, head, infraorbital region, maxilla, mandible, ear regions, teeth, face and zygomatic arcs or to the thoracic structures (thorax, shoulders and arms) [2-6]. The most frequent location described in the orofacial region is the throat and the mandible [7]. Referral with pain from head and neck region is a common occurrence in dental practice. Much less common, pain can be in craniofacial area from the heart in cases of angina pectoris and myocardial infarction [8]. The most common types of orofacial pain originate at the dental or periodontal level or in the musculoskeletal structures. The patient may present pain in this region even though the source is located elsewhere in the body [9]. The aim of this study was to

evaluate the prevalence of maxillofacial pain with cardiac origin in patients referring to Emam Ali Hospital, Kermanshah city, Iran, autumn 2012.

### MATERIALS AND METHODS

In autumn 2012, 215 patients with ischemic heart disease and angina pectoris referred to Emam Ali Hospital, Kermanshah, Iran. Age, sex and pain site were checked in all patients. Out of all patients, 192 patients had ischemic heart disease and 23 patients had angina pectoris.

### RESULTS

The mean age ( $\pm$ SD) of men was 60.7 years ( $\pm$ 13.52) and women was 63.9 years ( $\pm$ 11.81). The prevalence of type of disease (cardiac origin) in two genders has been shown in Table 1.

**Table-1: The prevalence of type of disease in the patients (n=215)**

Disease	Male	Female	Total
Ischemic heart disease	143(74.4)	49(25.6)	192(100)
Angina pectoris	14(60.9)	9(39.1)	23(100)

Table 2 shows the prevalence of pain site in all patients with cardiac origin. Out of 215 patients, 168 patients (77.29%) had chest pain, 39(19.04%) shoulder and chest pains, 3(1.38%) shoulder pain, 2(0.92%) neck

pain, 1(0.46%) neck and chest pains, 1(0.46%) neck, shoulder and chest pains; and 1(0.46%) maxillofacial and chest pains. The patient with maxillofacial was 67-year woman and had bilateral pain.

**Table-2: The prevalence of pain site in 215 patients with cardiac origin**

Site	n(%)
Chest	168(77.28)
Shoulder and Chest	39(19.04)
Shoulder	3(1.38)
Neck	2(0.92)
Neck and Chest	1(0.46)
Neck, Shoulder and Chest	1(0.46)
Maxillofacial and Chest	1(0.46)

## DISCUSSION

Referred pain to the face or teeth is recognized as a possible symptom of heart disease [10]. The clinical description of ischemic heart disease is characterized by substernal pain, which spreads to the shoulders, arms and neck. In some cases, the pain may spread to the jaws and teeth [11]. Pain originating in the heart in craniofacial structures is usually bilateral, whereas odontogenic pain is always unilateral [8,12]. The most frequent location described for craniofacial structures is in the throat and mandible [8]. In one study [8], a total of 6% of subjects had craniofacial pain as the only complaint of coronary ischaemia while an additional 32% experienced craniofacial pain concomitant with pain in other regions. Franco *et al.* [3] reported a 50-year-old female patient that referred to a dentist for evaluation of a suspected temporomandibular disorder after repeated visits to medical emergency departments due to excruciating facial and left temporal pain associated with exertion. The patients referred for cardiological evaluation and therefore a diagnosis of angina pectoris was made. Study of de Oliveira Franco *et al.* [6] evaluated a 65-year-old female patient that her chief complaint was facial pain, so she sought care from her general dental practitioner for evaluation of a suspected temporomandibular disorder, after repeated visits to the emergency department due to excruciating facial pain associated with exertion. Eventually, she referred for cardiological evaluation, as her pain radiated to the chest and there was a medical history of myocardial infarction. A report showed that there were reports of patients who were subjected to dental extractions for treatment of facial pain, but eventually diagnosed with angina due to ischaemic heart disease [13]. Pain of ischemic and non-ischemic cardiac disease can be referred to the craniofacial region. Also, in 6% of patients, craniofacial pain can be the first and only and symptom of cardiac ischemia [14]. Study of Dalband *et al.* [14] presented a 48-year-old man with a chief compliance of severe bilateral pain in the temporomandibular joint that referred for evaluation of a suspected temporomandibular disorder. The patient was referred for cardiological evaluation (exercise test,

electrocardiography, laboratory tests and coronary angiography) and was diagnosed with angina pectoris. López-López *et al.* [9] reported two cases, that the first case was a 54-year-old male with moderate and constant pain located diffusely in the third quadrant, affecting the entire area, including the teeth. During the follow-up visit, the patient presents a report from the cardiologist which states the diagnosis of unstable angina. The second case was a 78-year-old edentulous patient who wears a complete denture on the top and bottom (for more than 10 years) and presents pain felt in the left hemimandible. After performing a cardiological study, the patient was diagnosed with ischemic heart disease. One study [12], reported that eleven of the 30 cardiac patients were presented craniofacial pain before or during the cardiac seizure. The location of the pain was bilateral, non-irradiated at the mandible in all cases. Therefore, patients with facial pain associated with pain in the chest may occasionally be seen the first time by the dentist that to find later that their pain complaints were caused by coronary artery disease. In this study, cardiac patient with maxillofacial and chest pain was 67-year woman and had bilateral pain.

## CONCLUSIONS

The percentage of cardiac patients with maxillofacial pain is low, but because the probability of death and lack of opportunity for treatment of the patient, dentists should pay attention to this problem in the referred patients to the Clinic for cardiological evaluation.

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